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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/746,489	12/22/2000	Torsten Teich	DE919990076	8948

46369 7590 12/02/2005

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EXAMINER

KHOSHNOODI, NADIA

ART UNIT	PAPER NUMBER
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2137

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/746,489	Applicant(s) TEICH ET AL.	
	Examiner Nadia Khoshnoodi	Art Unit 2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 21-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 26-28 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Claims 21-25 have been cancelled. Applicant's arguments/amendments with respect to amended claims 1-20 filed 9/12/2005 have been fully considered but they are not persuasive. Furthermore, newly presented claims 26-28 are subject to a restriction by original presentation as described in further detail below. The Examiner would like to point out that this action is made final (See MPEP 706.07a).

Response to Arguments

Applicants contend that there is no teaching or suggestion in Schuyler of a "record-oriented data structure within each of the records which contains, in addition to the data contents, a first reference indicating the current data-containing record of a previous file, and a second reference indicating the current data-containing record of a subsequent file." Examiner respectfully disagrees in regards to the argument that Schuyler does not disclose a record-oriented data structure with each of the records which contains data contents. Schuyler teaches a directory structure, i.e. a record-oriented data structure (col. 7, line 50 – col. 8, line 41). Furthermore, the Examiner would like to point out that the limitation "record-oriented data structure **within** each of the records which contains..." as argued does not appear word-for-word in the claim language. The limitation in the claim reads "record-oriented data structure **with** each of the records which contains..." and has a different scope from the limitation as pointed out. Therefore, Schuyler teaches a record-oriented data structure with each of the records which contains data contents.

Since this feature was not explicitly disclosed by Schuyler, the Examiner relied on Klausmeier et al., who teach a second reference indicating the current data-contained record of a subsequent file (col. 9, lines 17-29).

Furthermore, Applicants contend that Klausmeier et al. fail to teach a “write operation comprising two stages, with updates accepted in a single atomic write stage.” Examiner respectfully disagrees. Klausmeier et al. teach, on several occasions, that there are a number of memory operations followed by one atomic write stage (col. 11, lines 1-3; col. 13, lines 5-10; and col.13 lines 17-21). Thus, Klausmeier et al. teach a write operation comprising two stages, with updates accepted in a single atomic write stage.

In regards to Applicants’ argument that the record-oriented data structure disclosed in Schuyler does not contain “a first reference indicating the current data-containing record of a previous file,” the Examiner has already pointed out that this feature is not explicitly disclosed by Schuyler in the previous office action on page 5. Since this feature was not explicitly disclosed by Schuyler, the Examiner relied on Ofek et al. who teach doubly-linked lists, which are known to have more benefits when implemented because they encompass two references instead of one, i.e. a reference to both previous and subsequent records in a linked list (col. 2, lines 9-28).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5

USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Schuyler was modified to incorporate the teachings of Klausmeier et al. to incorporate the specifics of the write stage into the record-oriented data structure, where the motivation to combine the two arts is found in Klausmeier et al. in col. 4, lines 32-45. Then, Ofek et al. was used to modify the linked list disclosed in Klausmeier et al. for the added benefits of having a doubly-linked list, where having two reference pointers instead of one is the reason that one would modify the linked list in Klausmeier et al. to use the doubly-linked list as disclosed in Ofek et al. in col. 2, lines 9-28 and col. 7, lines 12-28.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Due to the reasons stated above, the Examiner maintains rejections with respect to amended claims 1-20. Schuyler in combination with Klausmeier et al. and Ofek et al. teach the limitations that the Applicants suggest distinguish from the prior art. Therefore, it is the Examiner's conclusion that amended claims 1-20 are not patentably distinct or non-obvious over the prior art of record as presented.

Election/Restrictions

Newly submitted claims 26-28 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: these claims are directed towards a method for ensuring consistency of data stored in records in different files where the records are changed by a transaction thereby defining a primary file as well as determining various statuses for the primary file thus are different from the originally presented claims which have no such limitations.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 26-28 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

I. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

II. Claims 1-8 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuyler, U.S. Patent No. 5,832,526 and further in view of Klausmeier et al., U.S. Patent No. 6,487,202 and Ofek et al., U.S. Patent No. 5,751,993.

As per claim 1:

Schuyler substantially teaches file recovery techniques for recovering all of each file's data (col. 4, lines 39-42) where the process of recovery is equivalent to that of a data restoration which may very well be during a write operation, pre-allocated storage sub-areas of a random access storage device with an end-of-file tagging code (col. 4, lines 55-65) where the end-of-file tagging code is a position status byte, and a file to have all of its data recorded in logically sequential order across storage sub-areas (col. 7, lines 56-60) where the data recording is equivalent to a write operation and a logical storage method is to store the entire data set in a like manner.

Not explicitly disclosed by Schuyler is where each of the records additionally containing a second reference indicating the current data-containing record of a subsequent file, wherein the write operation comprises an update stage and an atomic write stage, the update stage comprising multiple update operations performed for a plurality of records employing the second references of at least some records of the plurality of records, and wherein the updates to the plurality of records are accepted in one atomic write stage after completion of the multiple update operations.

However, Klausmeier et al. teach employing multiple update operations on a plurality of records by adding new records to the list, i.e. employing the second reference of at least some of the plurality of records. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the method disclosed in Schuyler to allow for a write operation to comprise an update stage comprising multiple update operations performed for a plurality of records employing the second references of at least some records of the plurality of records. This modification would have been obvious because a person having ordinary skill in

the art, at the time the invention was made, would have been motivated to do so since it is suggested by Klausmeier et al. in col. 9, lines 17-29.

Furthermore, Klausmeier et al. also teach accepting the updates in one atomic write stage after completing the multiple operations. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the method disclosed in Schuyler to accept the updates in one atomic write stage upon completion of the multiple operations. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since it is suggested by Klausmeier et al. in col. 9, lines 27-41.

Also not explicitly disclosed by Schuyler is where each of the records additionally containing a first reference indicating the current data-containing record of a previous file, the one atomic write stage employing the first reference of the at least some records of the plurality of records.

However, Ofek et al. teach using a doubly linked list. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the method disclosed in Schuyler and Klausmeier et al. for the list to be a doubly-linked list in order for each of the records to also contain a first reference indicating the current data-containing records of a previous file. Furthermore, it would then also be obvious to have the one atomic write stage to employ the first reference of the at least some records of the plurality of records, just as Klausmeier et al. disclose that the second references are employed. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since it is suggested by Ofek et al. in col. 2, lines 9-

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19.

As per claim 2:

Schuyler, Klausmeier et al., and Ofek et al. substantially teach the method as applied to claim 1 above. Further, Schuyler teaches a sequence of allocation blocks or fragments that store the file's data (col. 4, lines 4-35) and recording user comments about the file (col. 4, lines 34-35).

As per claim 3:

Schuyler, Klausmeier et al., and Ofek et al. substantially teach the method as applied to claim 2 above. Further, Schuyler teaches that random access devices store executable code, which may be lost when power is lost and will require updating by a non-volatile random access memory device such as flash EEPROM (col. 7, lines 5-15). Thus, the code or data is stored in an EEPROM before a function (i.e. write) is performed in case a power failure occurs, then if a power failure does occur the data files are updated by the EEPROM storage.

As per claim 4:

Schuyler, Klausmeier et al., and Ofek et al. substantially teach the method as applied to claim 1 above. Further, Schuyler teaches that before power loss an indicator designates the sequence of allocation blocks or fragments that store the file's data (col. 4, lines 1-7).

As per claim 5:

Schuyler, Klausmeier et al., and Ofek et al. substantially teach the method as applied to claim 3 above. Further, Schuyler teaches that before power loss an indicator designates the sequence of allocation blocks or fragments that store the file's data (col. 4, lines 1-7).

As per claim 6:

Schuyler, Klausmeier et al., and Ofek et al. substantially teach the method as applied to

claim 5 above. Further, Schuyler teaches the algorithm may additionally or alternatively record the next sub-area as being the probable first sub-area of a next file or file fragment or the beginning of free space or a free space fragment (col. 16, lines 67 and col. 17, lines 1-3).

As per claim 7:

Schuyler, Klausmeier et al., and Ofek et al. substantially teach the method as applied to claim 6 above. Further, Schuyler teaches a tag format version number where validated information is gathered (col. 17, lines 7-20).

As per claim 8:

Schuyler substantially teaches EEPROM may be used in carrying out nonvolatile data storing functions (col. 7, lines 40-55), data is recorded with down-pointing arrow headed lines to indicate that directory structure points the way to portions of the internal files (col. 7, lines 50-55), data recorded in logically successive storage sub-areas where the second storage area is immediately adjacent to the first storage area (col. 7, lines 61-67), and unique header blocks (or unique templates) and thereby identifies the locations where each application begins (col. 4, lines 56-65).

Not explicitly disclosed by Schuyler is where each of the records additionally containing a second reference indicating the current data-containing record of a subsequent file, wherein the write operation comprises an update stage and an atomic write stage, the update stage comprising multiple update operations performed for a plurality of records employing the second references of at least some records of the plurality of records, and wherein the updates to the plurality of records are accepted in one atomic write stage after completion of the multiple update operations.

However, Klausmeier et al. teach employing multiple update operations on a plurality of records by adding new records to the list, i.e. employing the second reference of at least some of the plurality of records. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the method disclosed in Schuyler to allow for a write operation to comprise an update stage comprising multiple update operations performed for a plurality of records employing the second references of at least some records of the plurality of records. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since it is suggested by Klausmeier et al. in col. 9, lines 17-29.

Furthermore, Klausmeier et al. also teach accepting the updates in one atomic write stage after completing the multiple operations. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the method disclosed in Schuyler to accept the updates in one atomic write stage upon completion of the multiple operations. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since it is suggested by Klausmeier et al. in col. 9, lines 27-41.

Also not explicitly disclosed by Schuyler is where each of the records additionally containing a first reference indicating the current data-containing record of a previous file, the one atomic write stage employing the first reference of the at least some records of the plurality of records.

However, Ofek et al. teach using a doubly linked list. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the method disclosed

in Schuyler and Klausmeier et al. for the list to be a doubly-linked list in order for each of the records to also contain a first reference indicating the current data-containing records of a previous file. Furthermore, it would then also be obvious to have the one atomic write stage to employ the first reference of the at least some records of the plurality of records, just as Klausmeier et al. disclose that the second references are employed. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since it is suggested by Ofek et al. in col. 2, lines 9-19.

As per claim 20:

Schuyler substantially teaches EEPROM may be used in carrying out nonvolatile data storing functions (col. 7, lines 40-55), an EEPROM may carry out the nonvolatile data storing functions where data is recorded on the disk subsystem to define a directory structure and a plurality of files (col. 7, lines 47-49), and a file is shown to have all of its data recorded in across successive storage sub-areas of a storage area (col. 7, lines 40-49).

Not explicitly disclosed by Schuyler is where each of the records additionally containing a second reference indicating the current data-containing record of a subsequent file, wherein the write operation comprises an update stage and an atomic write stage, the update stage comprising multiple update operations performed for a plurality of records employing the second references of at least some records of the plurality of records, and wherein the updates to the plurality of records are accepted in one atomic write stage after completion of the multiple update operations.

However, Klausmeier et al. teach employing multiple update operations on a plurality of

records by adding new records to the list, i.e. employing the second reference of at least some of the plurality of records. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the method disclosed in Schuyler to allow for a write operation to comprise an update stage comprising multiple update operations performed for a plurality of records employing the second references of at least some records of the plurality of records. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since it is suggested by Klausmeier et al. in col. 9, lines 17-29.

Furthermore, Klausmeier et al. also teach accepting the updates in one atomic write stage after completing the multiple operations. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the method disclosed in Schuyler to accept the updates in one atomic write stage upon completion of the multiple operations. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since it is suggested by Klausmeier et al. in col. 9, lines 27-41.

Also not explicitly disclosed by Schuyler is where each of the records additionally containing a first reference indicating the current data-containing record of a previous file, the one atomic write stage employing the first reference of the at least some records of the plurality of records.

However, Ofek et al. teach using a doubly linked list. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the method disclosed in Schuyler and Klausmeier et al. for the list to be a doubly-linked list in order for each of the

records to also contain a first reference indicating the current data-containing records of a previous file. Furthermore, it would then also be obvious to have the one atomic write stage to employ the first reference of the at least some records of the plurality of records, just as Klausmeier et al. disclose that the second references are employed. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since it is suggested by Ofek et al. in col. 2, lines 9-19.

As per claim 21:

Schuyler, Klausmeier et al., and Ofek et al. substantially teach the method as applied to claim 1 above. Further, Schuyler teaches Schuyler teaches that random access devices store executable code, which may be lost when power is lost and will require updating by a non-volatile random access memory device such as flash EEPROM (col. 7, lines 515).

As per claim 22:

Schuyler, Klausmeier et al., and Ofek et al. substantially teach the method as applied to claim 7 above. Further, Schuyler teaches that random access devices store executable code, which may be lost when power is lost and will require updating by a non-volatile random access memory device such as flash EEPROM (col. 7, lines 5-15).

As per claim 23:

Schuyler, Klausmeier et al., and Ofek et al. substantially teach the method as applied to claim 8 above. Further, Schuyler teaches that random access devices store executable code, which may be lost when power is lost and will require updating by a non-volatile random access memory device such as flash EEPROM (col. 7, lines 5-15).

III. Claims 9-11 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuyler U.S. Patent No. 5,832,526, Klausmeier et al. U.S. Patent No. 6,487,202, and Ofek et al. U.S. Patent No. 5,751,993 and further in view of Steiner et al., U.S. Patent No. 6,003,134.

As per claim 9:

Schuyler, Klausmeier et al., and Ofek et al. substantially teach the method as applied to claim 8 above. Schuyler fails to teach two or more data files are affected by the write operation, and wherein new or modified data is written into the files in a cyclic manner, wherein each file comprises an indication of the number of records contained in the file and a plurality of records, and wherein each record comprises an indication of the status of the data in the record, a synchronization number synchronizing with records of other files, and the data. Steiner et al. teach data is recorded on the disk subsystem to define a directory structure and a plurality of files, Down-pointing arrow-headed lines are drawn to indicate that directory structure points the way to the start and subsequent portions of the internal files (col. 7, lines 49-54).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the method by Schuyler by including cyclic writing with the application of an indicator for each file. This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so, as suggested by Steiner et al. in order to be able to locate a file at a later time.

As per claim 10:

Schuyler, Klausmeier et al., Ofek et al., and Steiner et al. substantially teach the method as applied to claim 9 above. Further, Schuyler teaches identifying the physical start of each stored file, associating each file with a corresponding file name (col. 4, lines 1-4), specifying a

graphical icon where the graphical icon represents the file (col. 4, lines 21-26) and specifying an application program to be associated with the file, such as the application program that created or last modified the file (col. 4, lines 29-31).

Schuyler fails to teach copying the data stored in the current active record into the working record and adding to or modifying the data according to the write operation in the working record, changing the status of the working record of the file to active; repeating the steps for each further file and changing the record status of the original current active record of the first file to inactive as an indication that the write operation is complete. Steiner et al. teach when the journal or log file approaches its maximum size, any new data placed in the file will overwrite the oldest data in the file---if sufficient space is allocated, many systems are capable of storing sufficient data to achieve the purpose of the log file (col. 1, lines 50-60), the storage sessions where pieces of the file of interest are located have been identified- the next step is to retrieve the various portions of the file from the various archive storage sessions and coalesce the most recent versions of all pieces of the file (col. 3, lines 19-41), and indicate that the previous versions of the file have been superceded by invalidating the previous written data which indicates to the system that the version has been superceded (col. 3, lines 51-61).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the method by Schuyler by including copying the data stored and changing the status of files. This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so, as suggested by Steiner et al., in order to adapt the files to changing data states.

As per claim 11:

Schuyler, Klausmeier et al., Ofek et al., and Steiner et al. substantially teach the method as applied to claim 10 above. Schuyler fails to teach the step of determining the current active record and the working record of the files comprises searching for the first record in the file whose status byte indicates active status and setting this record as said current active record, and setting the subsequent record as the working record. Steiner et al. teach the storage sessions where pieces of the file of interest are located have been identified- the next step is to retrieve the various portions of the file from the various archive storage sessions and coalesce the most recent versions of all pieces of the file (col. 3, lines 19-41), and indicate that the previous versions of the file have been superceded by invalidating the previous written data which indicates to the system that the version has been superceded (col. 3, lines 51-61).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the method by Schuyler by determining the current active and working record of the files. This modification would have been obvious because a person having ordinary skill in they art would have been motivated to do so, as suggested by Steiner et al., in order to adapt the files to changing data states.

As per claim 25:

Schuyler, Klausmeier et al., and Ofek et al. substantially teach the method as applied to claim 21 above. Schuyler fails to teach a computer programme stored on a data carrier medium. Steiner teaches a computer readable media having executable instructions or data fields stored (col. 5, lines 18-29).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the method by Schuyler by including a computer

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programme. This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so, as suggested by Steiner et al., in order to have access to an operating tool.

IV. Claims 12-19 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuyler U.S. Patent No. 5,832,526, Klausmeier et al. U.S. Patent No. 6,487,202, Ofek et al. U.S. Patent No. 5,751,993, and Steiner U.S. Patent No. 6,003,134, and further in view of Kuo et al. U.S. Patent No. 6,003,134.

As per claim 12:

Schuyler, Klausmeier et al., Ofek et al., and Steiner et al. substantially teach the method as applied to claim 11 above. Further, Schuyler teaches additional information is stored in a structure, which is used to tie together the fragmented portions of each file (col. 3, lines 24-36), a unique tagging code is recorded in each file (col. 9, lines 65-67) possibly with an end-of file tagging code (TAG) (col. 10, lines 1-4) with an active status indicator being an option, the recorded unique tagging code or codes of slack areas and may be used during file recovery operations to create end of file pointers (col. 10, lines 12-15), application programs place unique header blocks at the beginning of their generated data files (col. 4, lines 56-65), routinely making secondary modifications to the mirror directory structure each time primary modifications are made to the primary directory structure (col. 10, lines 47-52), and a unique tagging code is recorded in each file (col. 9, lines 65-67) possibly with an end-of-file tagging code (TAG) (col. 10, lines 1-4) with an active status indicator being an option.

Schuyler fails to teach identifying a current active record and a working record of a second file and copying the data from the current active record to the working record, setting

synchronization indicator pointers to indicate the link between this file and the first file and changing the synchronization indicator pointer of the first file to indicate its link with the second file, repeating these steps for the second file for any subsequent files, and identifying the current active record of the file and a working record and copying the data to be added to or modified from the current active record to the working record. Steiner teaches a file has various modified portions are written to archive storage session where archive storage session would then include file updates (col. 7, lines 55-60), the storage sessions where pieces of the file of interest are located have been identified- the next step is to retrieve the various portions of the file from the various archive storage sessions and coalesce the most recent versions of all pieces of the file (col. 3, lines 19-41), and indicate that the previous versions of the file have been superceded by invalidating the previous written data which indicates to the system that the version has been superceded (col. 3, lines 51-61). Kuo et al. teach storing signature-type information that may be stored with a file and identifying which copies of a file are current (col. 12, lines 31-46).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the method by Schuyler by obtaining access to records and copying them and modifying the active record. This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so, as suggested by Steiner et al., in order to convert files to a working status and identify the files.

As per claim 13:

Schuyler, Klausmeier et al., Ofek et al., Steiner et al., and Kuo et al. substantially teach the method as applied to claim 12 above. Schuyler fails to teach an interruption of the write operation at any stage, either all current active records of all files affected by the operation are

set as fully active records, and the data contained in the files prior to the start of the write operation is the current active data, or all working records of all files are set to a fully active status, in which case all files contain the modified data due to the write operation as the active data. Steiner teaches at a later time a file had various modified portions, the archive storage session is initiated and modified portions of file are written to archive storage session which include file updates and are associated with an index (col. 7, lines 55-67) that may designate active status.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the method by Schuyler by recovering from a write interruption. This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so, as suggested by Steiner, in order to assure that data is not lost upon a malfunction of the writing apparatus.

As per claim 14:

Schuyler, Klausmeier et al., Ofek et al., Steiner et al., and Kuo et al. substantially teach the method as applied to claim 13 above. Further, Schuyler teaches a variety of events may occur during the operational life of a disk that work to undesirability damage different parts of the disk and/or destroy data that is stored in those parts (col. 3, lines 62-67) and the files are associated with a corresponding file name (col. 4, lines 3-4).

As per claim 15:

Schuyler, Klausmeier et al., Ofek et al., Steiner et al., and Kuo et al. substantially teach the method as applied to claim 13 above. Further, Schuyler teaches a variety of events may occur during the operational life of a disk that work to undesirability damage different parts of

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the disk and/or destroy data that is stored in those parts (col. 3, lines 62-67) and the files are associated with a corresponding filename (col. 4, lines 3-4).

As per claim 16:

Schuyler, Klausmeier et al., Ofek et al., Steiner, and Kuo et al. substantially teach the method as applied to claim 13 above. Further, Schuyler teaches a variety of events may occur during the operational life of a disk that work to undesirability damage different parts of the disk and/or destroy data that is stored in those parts (col. 3, lines 62-67) and the files are associated with a corresponding file name (col. 4, lines 3-4).

As per claim 17:

Schuyler, Klausmeier et al., Ofek et al., Steiner et al., and Kuo et al. substantially teach the method as applied to claim 13 above. Further, Schuyler teaches a variety of events may occur during the operational life of a disk that work to undesirability damage different parts of the disk and/or destroy data that is stored in those parts (col. 3, lines 62-67) and the files are associated with a corresponding filename (col. 4, lines 3-4).

As per claim 18:

Schuyler, Klausmeier et al., Ofek et al., Steiner et al., and Kuo et al. substantially teach the method as applied to claim 13 above. Further, Schuyler teaches a variety of events may occur during the operational life of a disk that work to undesirability damage different parts of the disk and/or destroy data that is stored in those parts (col. 3, lines 62-67) and the files are associated with a corresponding file name (col. 4, lines 3-4).

As per claim 19:

Schuyler, Klausmeier et al., Ofek et al., Steiner et al., and Kuo et al. substantially teach

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the method as applied to claim 12 above. Further, Schuyler teaches a section consists of a succession of storage sub-areas (col. 9, lines 6-8) where pointers point to the allocated block of a fragment (col. 9, lines 46-58) and a file is defined by a file size header (col. 9, lines 40-45).

As per claim 24:

Schuyler, Klausmeier et al., Ofek et al., Steiner et al., and Kuo et al. substantially teach the method as applied to claim 12 above. Further, Schuyler teaches that random access devices store executable code, which may be lost when power is lost and will require updating by a non-volatile random access memory device such as flash EEPROM (col. 7, lines 5-15).

**References Cited, Not Used*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- 1. U.S. Patent No. 5,974,503
- 1. U.S. Patent No. 6,230,200
- 1. U.S. Patent No. 5,592,432
- 1. U.S. Patent No. 6,122,645

The above references have been cited because they are relevant due to the manner in which the invention has been claimed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

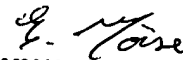
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nadia Khoshnoodi whose telephone number is (571) 272-3825. The examiner can normally be reached on M-F: 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571) 272-3865. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Nadia Khoshnoodi
Examiner
Art Unit 2137
11/28/2005

NK



EMMANUEL L. MOISE
SUPERVISORY PATENT EXAMINER